The RALLY study: dose finding study for radiation lobectomy using holmium-166 microspheres to improve resectability in patients with HCC.

No registrations found.

Ethical review	Positive opinion
Status	Recruiting
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON23909

Source
Nationaal Trial Register

Brief title
RALLY

Health condition

Hepatocellular Carcinoma

Sponsors and support

Primary sponsor: UMC Utrecht
Source(s) of monetary or material Support: Terumo

Intervention

Outcome measures

Primary outcome

To establish the maximum tolerated healthy liver-absorbed dose of 166Ho-microspheres in

patients with HCC who receive radiation lobectomy as a bridge to surgery.

Secondary outcome

1) To establish dose-response relationships between:
a. The perfused normal liver-absorbed dose and FLR response.
b. The tumour-absorbed dose and tumour response.
2) To establish the safety and feasibility of surgical resection of the irradiated lobe.
3) To assess quality of life of patients.
4) To generate a biobank of resected liver specimens for future analyses of therapy surviving cancer cells.

Study description

Background summary

Radiation lobectomy as a means of controlling tumour growth while concomitantly inducing future liver remnant (FLR) hypertrophy has recently gained interest to convert unresectable hepatocellular carcinoma (HCC) patients. Dosimetry is of major importance here, since particularly healthy liver-absorbed dose drives FLR response. However, current techniques using yttrium-90 (90Y) beta-radiation emitting microspheres cannot be visualised properly. This makes it difficult to accurately predict healthy liver-absorbed dose. Radiation lobectomy using holmium-166 (166Ho) offers a potentially more safe, effective and personal treatment modality, due to its variety of imaging options. However, the acceptable toxicity dose profile of 166Ho on healthy liver tissue in this setting is unknown.

Study objective

Holmium-166 radiation lobectomy is a safe method to bridge patients with HCC to resection.

Study design

T1: Screening
T2: Radiation lobectomy
T3: Post radition lobectomy follow-up visits (at 1.5, 3, 4.5, 6 and 9 months after radiation lobectomy or until resection is feasible).
T4: Surgery
T5: Post surgery follow-up visit (3 months after surgery)

Intervention

Holmium-166 radiation lobectomy

Contacts

Public
UMC Utrecht
Inne Borel Rinkes

+31 88 75 580 74
Scientific
UMC Utrecht
Inne Borel Rinkes

+31 88 75 580 74

Eligibility criteria

Inclusion criteria

In order to be eligible to participate in this study (including the biobank), a subject must meet all of the following criteria:

1) Patients must have given written informed consent.
2) Age ≥ 18 years.
3) ECOG Performance status 0-1.
4) Diagnosis of HCC, established according to the Netherlands HCC guideline criteria (in line with American AASLD criteria): nodule >1 cm in a patient at risk for HCC, with combination of arterial hypervascularity and venous or delayed phase wash-out on multiphase CT-scan or MRI-scan.
5) HCC with indication for major hepatectomy (i.e., >2 segments), as decided by multidisciplinary tumour board.
6) Hepatobiliary scintigraphy > 1.5%/min/m2 and < 2.7 %/min/m2.
7) Negative pregnancy test for women of childbearing potential. Female patients of childbearing potential should use a highly effective acceptable method of contraception (oral contraceptives, barrier methods, approved contraceptive implant, long-term injectable contraception, intrauterine device or tubal ligation) or should be more than one year postmenopausal or surgically sterile during their participation in this study (from the time they sign the consent form), to prevent pregnancy.
8) Patients with compensated Child-Pugh A and unilobar BCLC-B or less (without evidence of portal hypertension).

Exclusion criteria

A potential subject who meets any of the following criteria will be excluded from participation in this study:

1) Evidence of extrahepatic disease (MRI-scan liver and multiphase abdominal CT as well as a thoracic CT are routinely performed at screening).
2) Any previous hepatic external beam radiation therapy before the start of study therapy.
3) Previous treatment with radioembolization/radiation lobectomy.
4) Major surgery within 4 weeks or incompletely healed surgical incision before starting study therapy.
5) Glomerular filtration rate <35 ml/min, determined according to the Modification of Diet in Renal Disease formula.
6) Non correctable INR > 1.5.
7) Significant cardiac event (e.g., myocardial infarction, superior vena cava syndrome, New York Heart Association (NYHA) classification of heart disease ≥ 2 within 3 months before entry, or presence of cardiac disease that in the opinion of the investigator increases the risk of ventricular arrhythmia.
8) Pregnancy or breastfeeding.
9) Patients suffering from psychic disorders that make a comprehensive judgment impossible, such as psychosis, hallucinations and/or depression.
10) Patients who are declared incompetent.
11) Previous enrolment in the present study.
12) Patients who do not use an acceptable method of contraception during their participation in this study (from the time they sign the consent form) to prevent pregnancy. In case of female: are less than 1 year postmenopausal and not using an acceptable method of contraception. Patients who had surgical sterilization may be included.
13) Any contraindication precluding surgery, with the exception of insufficient FLR as defined by hepatobiliary scintigraphy.
14) Portal vein thrombosis (tumour and/or bland) (diagnosed on contrast enhanced transaxial images).
15) Untreated active hepatitis. In case of detectable viral hepatitis B virus load, treatment with a nucleos(t)ide analog such as entecavir or tenofovir should be instituted.
16) Transjugular intrahepatic portosystemic shunt.
17) Body weight over 150 kg (because of maximum table load).
18) Severe allergy for intravenous contrast (Visipaque®).
19) Lung shunt > 30 Gy, as calculated using 166Ho-microspheres scout dose using SPECT/CT.
20) Not correctable extrahepatic deposition of scout dose activity. Activity in the falciform ligament, portal lymph nodes and gallbladder is accepted.
21) Any systemic therapy (including transcatheter arterial chemoembolization) prior to the start of study therapy. Radiofrequency ablation or previous resection (> 4 weeks) is accepted.
22) Leukocytes <2 109/L and/or platelet count <50 109/L. Serum bilirubin >34.2 micromol/L (2 mg/dL).

Study design

Design

Study type:	Interventional
Intervention model:	Other
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	22-09-2021
Enrollment:	24
Type:	Anticipated

IPD sharing statement

Plan to share IPD: No

Ethics review

Positive opinion

Date:	15-09-2020
Application type:	First submission

Study registrations

Followed up by the following (possibly more current) registration

ID: 54237
Bron: ToetsingOnline
Titel:

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL8902
CCMO	NL75713.041.21
OMON	NL-OMON54237

Study results